ORDER NO. GAD85052258A5

Service Manual

Radio Cassette

RX-F9

(Silver)

FM-AM-FM Stereo Radio Cassette Recorder

This is the Service Manual for the following areas.

ME ...For AAFES EUROPE

MF ...For AAFES PACIFIC

- Please use this manual together with the service manual for model No. RX-F9 order No. GAD84122219C1.
- This Service Manual indicates the main differences between; Original RX-F9 (for M mark area.) and RX-F9 ME MF for AAFES PACIFIC & EUROPE.

■ SPECIFICATIONS

General:
Power Requirement: AC; 120 V, 60 Hz

RX-F9 M (Original)

➡

General:
Power Requirement: **AC; 110~115/115~127/ 200~220/230~250 V, 50/60 Hz**

RX-F9 ME MF

■ PARTS COMPARISON TABLE

NOTES: Important safety notice.
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Ref. No.	Description	Part Number		Remarks
		RX-F9 M Original	**RX-F9 ME MF**	
T301	Power Transformer ⚠	RLT5Z3M2A	**RLT5Z3X4A**	
S17	Voltage Selector ⚠	———	**RSR4A06Z**	Added
K2	Rear Cabinet Ass'y	RYFXF9M7	**RYFXF9ME7**	
K52	Cover, Diode	RUV598Z	———	Deleted
K53	Cover, Diode	RUV599Z	———	Deleted
K56	Cover, Voltage Selector ⚠	———	**RUV387Z**	Added

Panasonic

Panasonic Tokyo
Matsushita Electric Industrial Co., Ltd.
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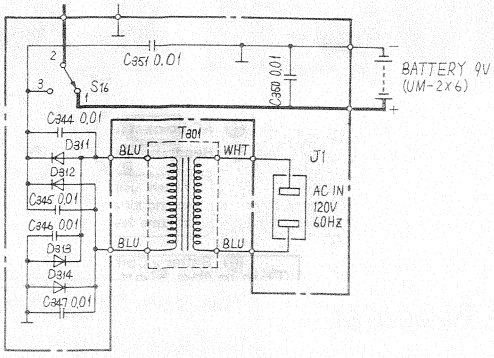
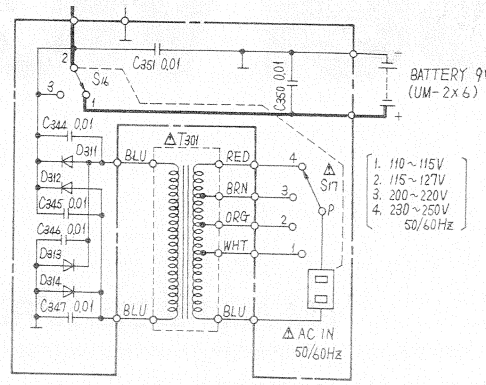
SCHEMATIC DIAGRAM

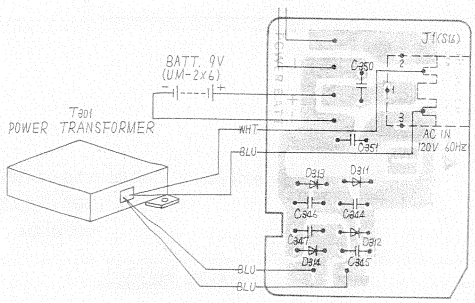


RX-F9 M (Original)

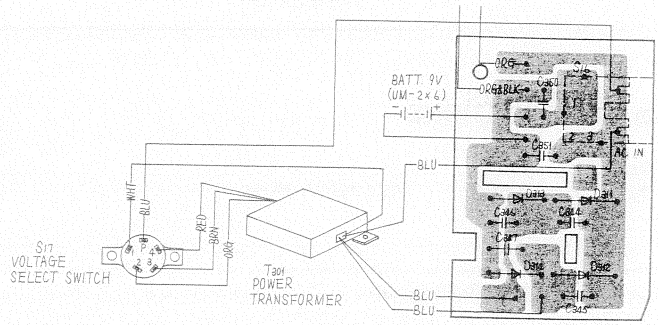


RX-F9 ME MF

CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM



RX-F9 M (Original)



RX-F9 ME MF

ORDER NO. GAD84122219C1
A1

Service Manual

Radio Cassette

RX-F9

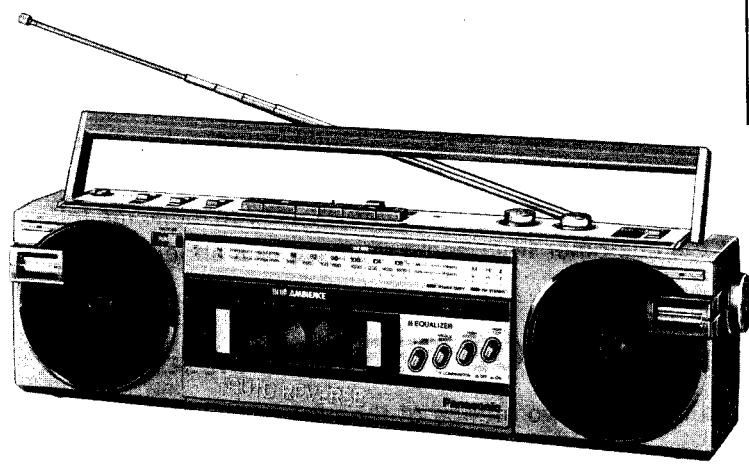
(Silver)

FM-AM-FM Stereo Radio Cassette Recorder

This is the Service Manual for the following areas.

M...For U.S.A.

C...For Canada



RX-F9 MECHANISM SERIES

■ SPECIFICATIONS

General:

Power Requirement:	AC; 120 V, 60 Hz Battery; 9 V (Six "C" Size Flashlight Batteries) (Panasonic UM-2 or equivalent)
Power Consumption:	14 W (AC only)
Power Output:	8 W (4 W×2)...RMS (max.)
Speaker:	Woofer; 10 cm (4") PM Dynamic Speaker (3Ω) Tweeter; 1.5 cm (5/8") Ceramic Speaker (200Ω)
Input:	LINE IN; sensitivity 200 mV/50 kΩ over DC IN; 13.2 V
Output:	HEADPHONES; 32Ω
Dimensions:	459 mm(W)×132 mm(H)×116 mm(D) (13 1/16×5 3/16×4 9/16)"
Weight:	2.8 kg (6 lb. 2.8 oz.) without batteries

Radio Section:

Radio Frequency Range:	FM; 88~108 MHz AM; 525~1610 kHz
Intermediate Frequency:	FM; 10.7 MHz AM; 455 kHz
Sensitivity:	FM; 2.2μV/500 mW output AM; 112μV/m/50 mW output

Tape Deck Section:

Frequency Response:	70~8,000 Hz (with normal tape) 70~8,000 Hz (with CrO_2 tape) 60~8,000 Hz (with Metal tape/PLAYBACK Only)
Recording system:	AC bias, AC erase
Tape Speed:	4.8 cm/s, (1 7/8 ips)
Program Time:	1 hour with C-60 cassette tape
Track System:	4-track 2-channel stereo recording and playback

Weights and dimensions shown are approximate.
(Les poids et dimensions mentionnés sont approximatifs.)
Specifications are subject to change without notice.

Panasonic®

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RX-F9

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SAFETY PRECAUTIONS (For U.S.A.)

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

INSULATION RESISTANCE TEST (For U.S.A.)

1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads, antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3MΩ and 5.2MΩ to all exposed parts*. (Fig. 1) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. 2)

   ***Note:** Some exposed parts may be isolated from the chassis by design. These will read infinity.

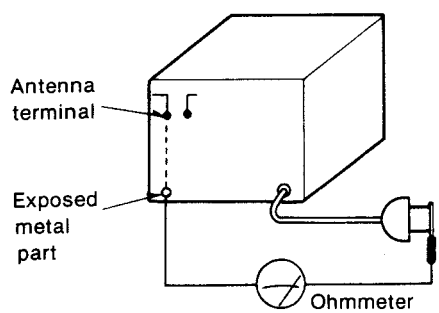


Fig. 1

Resistance = 3MΩ—5.2MΩ

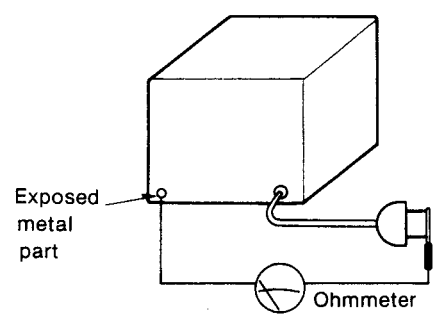
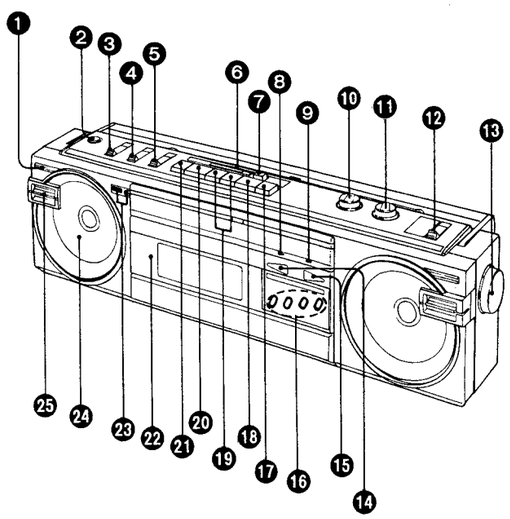


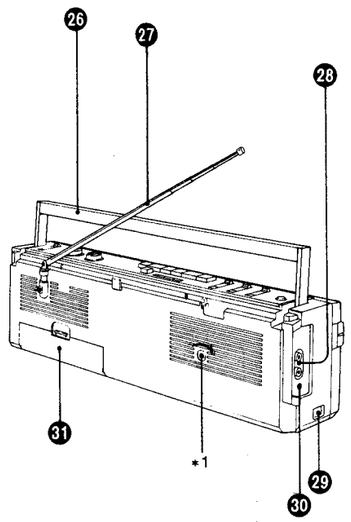
Fig. 2

Resistance = Approx ∞

4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

LOCATION OF CONTROLS AND COMPONENTS





BATTERY SERVICE LIFE

UM-2 (C-size) Batteries
Approx. 5.5 hours of recording (EIAJ)
Approx. 4 hours of playback (EIAJ) with volume set at ¾ position

The above battery service life is measured according to the conditions set forth by EIAJ (Electronic Industries Association of Japan). As the battery service life varies with the method of operation and environmental conditions, use these values as reference.

1. **Built-in Microphone (MIC)**
2. **Power Switch (POWER)**
3. **Mode Selector/Beat Proof Switch (MODE/BEAT PROOF) (AMBIENCE/II, STEREO/II, MONO/I)**
4. **Tape Selector (TAPE) (METAL (P.B)/CrO_2, NORMAL)**
5. **Function Selector (SELECTOR) (LINE, RADIO, TAPE)**
6. **Reverse Mode Selector (REVERSE MODE)**
7. **Direction Button (DIRECTION)**
8. **Power/Battery Check Indicator (POWER/BATT)**
9. **FM Stereo Indicator (FM STEREO)**
10. **Balance Control (BALANCE)**
11. **Volume Control (VOLUME)**
12. **Band Selector (BAND)**
13. **Tuning Control (TUNING)**
14. **Forward Indicator (FWD)**
15. **Reverse Indicator (REV)**
16. **Combination Equalizer Switches (EQUALIZER) (LOW BOOST, MIDDLE BOOST, HIGH BOOST, HIGH CUT)**
17. **Record Button (○ RECORD)**
18. **Playback Button (◁ ▷ PLAY)**
19. **Fast/Cue Buttons (◁◁ • ▷▷ FAST/CUE)**
20. **Stop/Eject Button (STOP/EJECT)**
21. **Pause Button (❚❚ PAUSE)**
22. **Cassette Compartment Cover**
23. **Tape Counter/Reset Button (COUNTER)**
24. **Speakers (Woofer) 10 cm (4"), 3Ω**
25. **Speakers (Tweeter) 1.5 cm (⅝"), 200Ω**
26. **Handle**
27. **Telescopic Antenna**
28. **Line Input Jacks (LINE IN) 200 mV/50 kΩ**
29. **AC Socket (AC IN ~)**
30. **Headphones Jack (PHONES) ∅3.5, 32Ω**

When using the headphones, avoid listening to sound for a long period of time and avoid excessive volume levels, which may injure your ears.

31. **Battery Compartment**

*1 When the tape is caught in the pinch roller, etc. release the tape by turning the pulley on the motor with the screwdriver in the direction of the arrow.

DISASSEMBLY INSTRUCTIONS

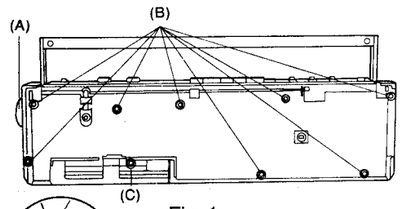


Fig. 1

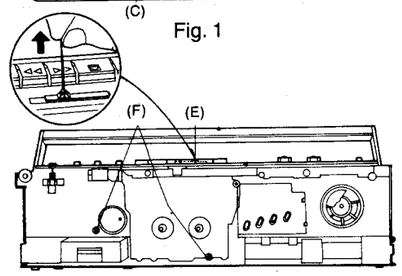


Fig. 2

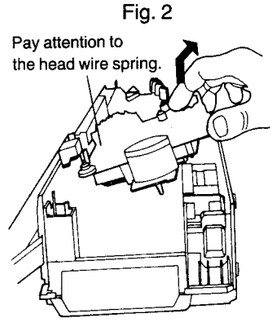


Fig. 3

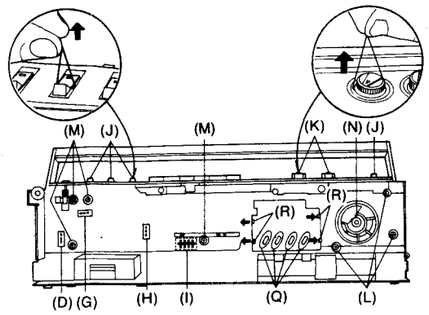


Fig. 4

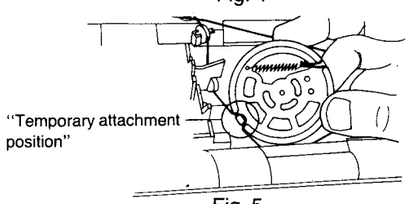


Fig. 5

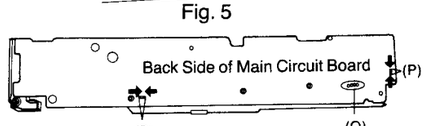


Fig. 6

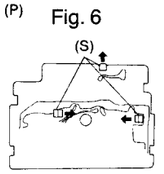


Fig. 7

Ref. No.	Shown in Fig.—.	To remove —.	Remove —.
1	1	Front Cabinet	Knob ..... (A)×1
2			Screw (3×55 mm) ..... (B)×8
3			Screw (3×15 mm) ..... (C)×1
4	4		Connector (CP4) ..... (D)×1
5	2	Mechanism	Knob ..... (E)×1
6			Screw (3×8 mm) ..... (F)×2
7	4		Connector (CP2) ..... (G)×1
8	3		Remove the mechanism in the direction of arrow.
9	4		Connector (CP6) ..... (H)×1
10			Connector (CP1) ..... (I)×1
11	4	Main Circuit Board	Knob ..... (J)×4
12			Knob ..... (K)×2
13			Screw (3×40 mm) ..... (L)×3
14			Screw (3×8 mm) ..... (M)×4
15	4	Dial Chassis	Screw (2.6×6 mm) ..... (N)×1
16	5		Temporarily stop the dial drum as shown in Fig. 5.
17	6		Unsolder ..... (O)×4
18			Push the catch in the direction of arrow ..... (P)×4
19	4	Equalizer Circuit Baord	Button (Switch off the button and remove.) ..... (Q)×4
20			Push the ribs in the direction of the arrow, and remove the equalizer plate. ..... (R)×4
21	7		Push the ribs in the direction of the arrow, and remove the LED holder. ..... (S)×3

▼Be sure to fold at the (▼) mark so that mark is on the outside.

DISASSEMBLY INSTRUCTIONS

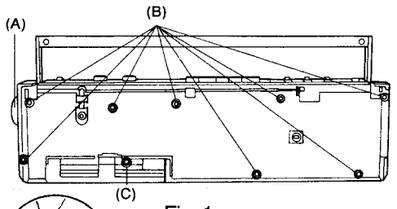


Fig. 1

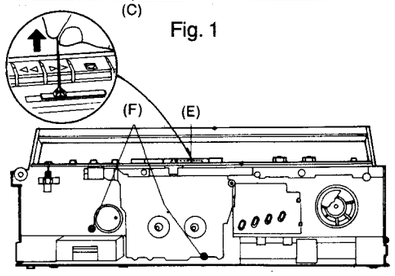


Fig. 2

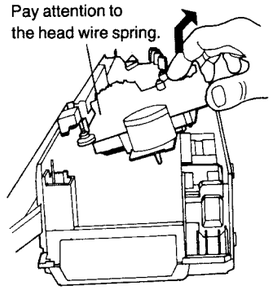


Fig. 3

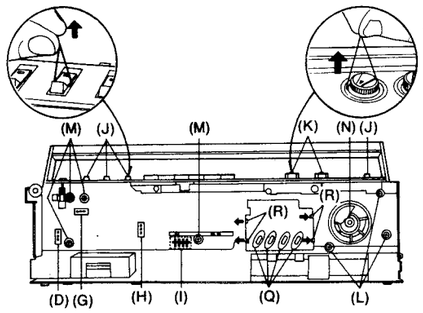


Fig. 4

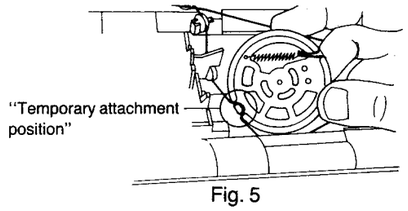


Fig. 5

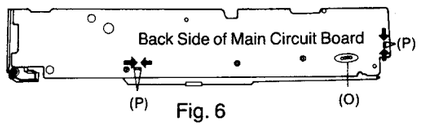


Fig. 6

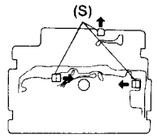


Fig. 7

Ref. No.	Shown in Fig.—.	To remove —.	Remove —.
1	1	Front Cabinet	Knob ..... (A)×1
2			Screw (3×55 mm) ..... (B)×8
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8	3		Remove the mechanism in the direction of arrow.
9	4		Connector (CP6) ..... (H)×1
10			Connector (CP1) ..... (I)×1
11	4	Main Circuit Board	Knob ..... (J)×4
12			Knob ..... (K)×2
13			Screw (3×40 mm) ..... (L)×3
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16	5		Temporarily stop the dial drum as shown in Fig. 5.
17	6		Unsolder ..... (O)×4
18			Push the catch in the direction of arrow ..... (P)×4
19	4	Equalizer Circuit Baord	Button (Switch off the button and remove.) ..... (Q)×4
20			Push the ribs in the direction of the arrow, and remove the equalizer plate. ..... (R)×4
21	7		Push the ribs in the direction of the arrow, and remove the LED holder. ..... (S)×3

▼Be sure to fold at the (▼) mark so that mark is on the outside.

■ How to remove the Cassette Compartment

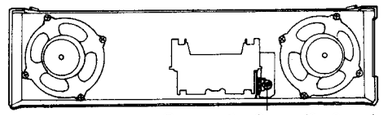
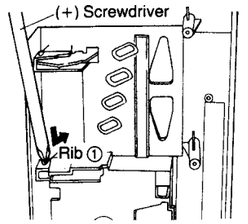
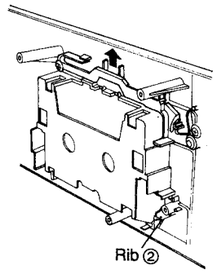


Fig. 8



Push rib ① of the cassette compartment with a regular screwdriver in the direction of the arrow.

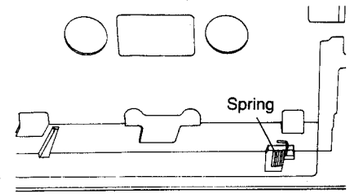
Fig. 9



Push the eject lever in the direction of the arrow, and rib ② will come off.

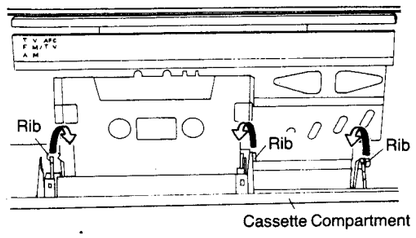
Fig. 10

■ How to replace the Cassette Compartment



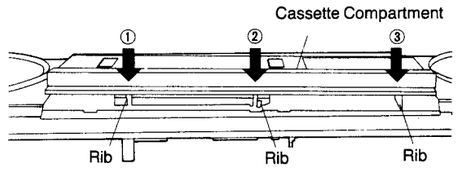
Temporarily attach the spring to the front cabinet.

Fig. 11



Turn the ribs of the cassette compartment toward the rear of the front cabinet.

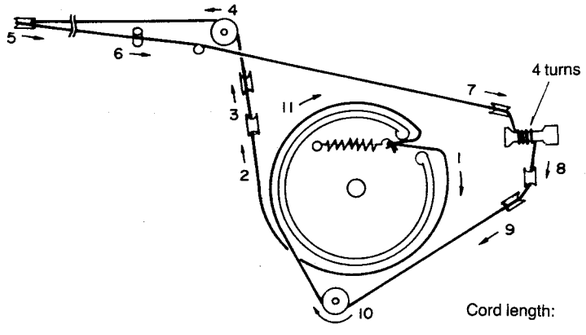
Fig. 12



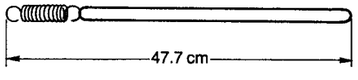
Depress the ribs of the cassette compartment in order from arrow ①.

Fig. 13

DIAL THREADING

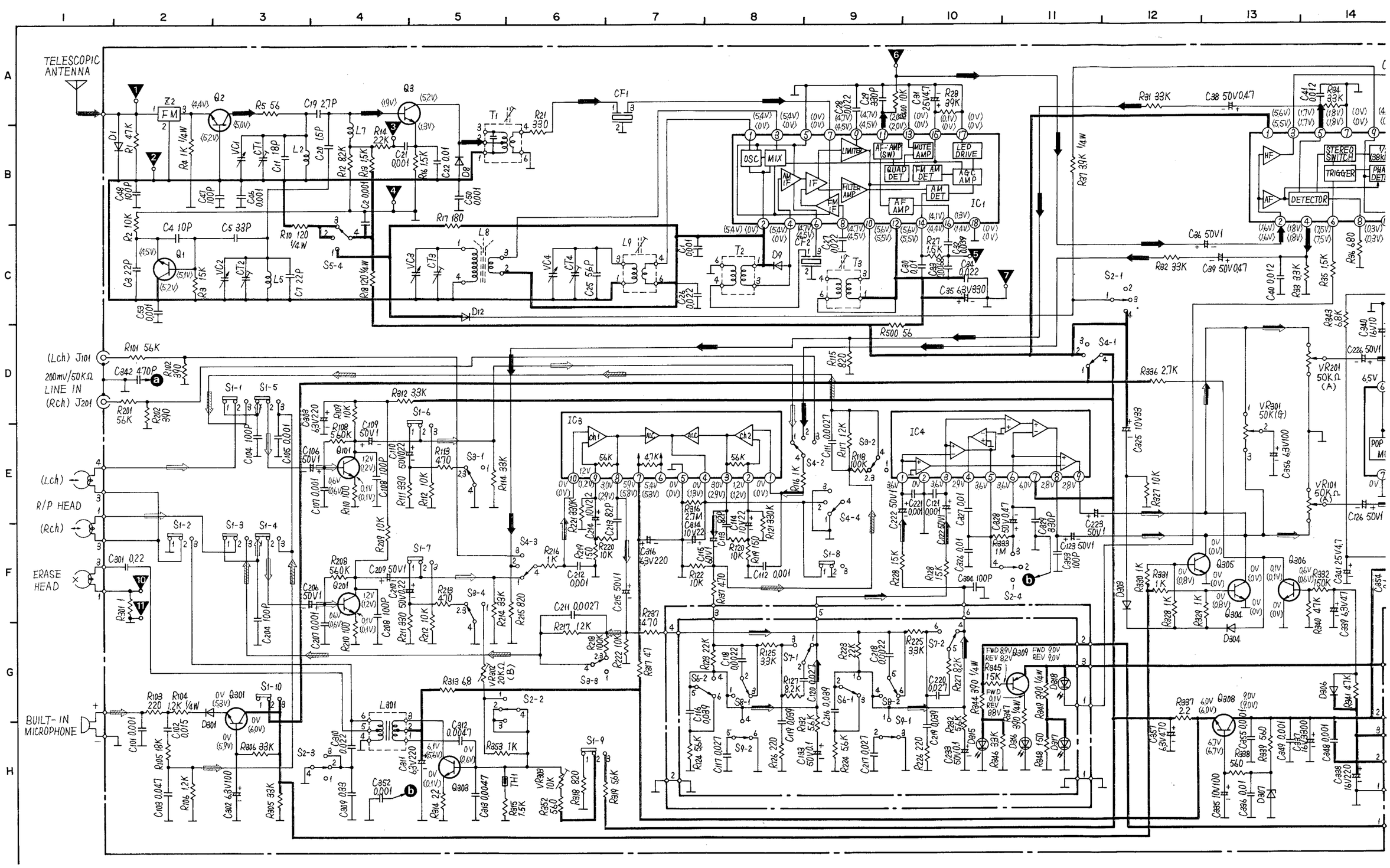


Cord length:

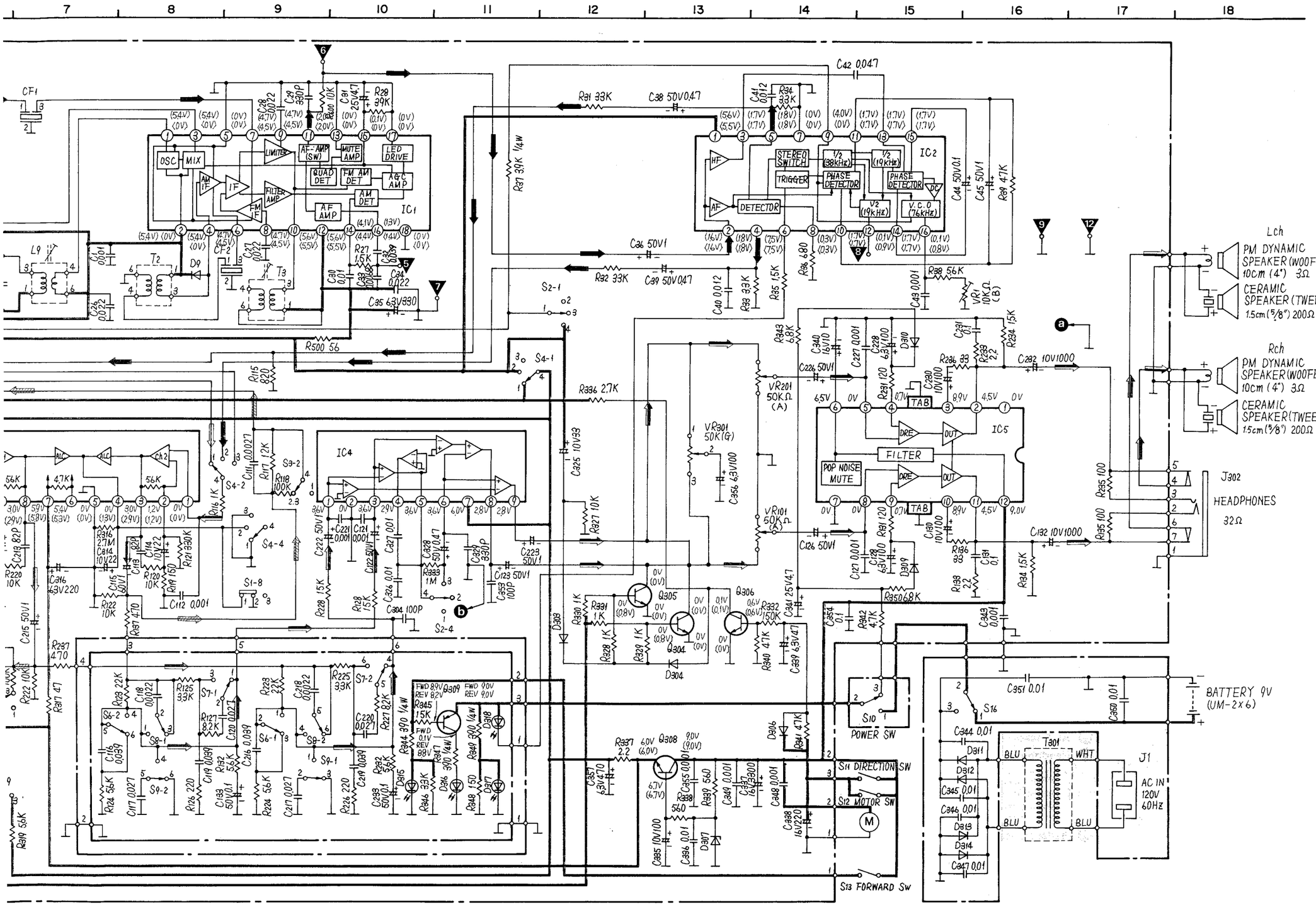


RX-F9 RX-F9

SCHEMATIC DIAGRAM MODEL RX-F9



SCHEMATIC DIAGRAM MODEL RX-F9



Note:

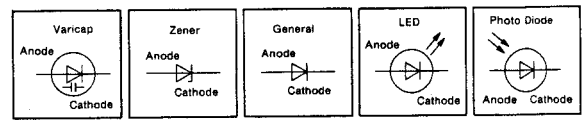
1. S1-1~S1-10: Record/Playback switch in "PLAYBACK" position. (1...PLAYBACK, 3...RECORD)
2. S2-1~S2-4: Mode/Beat Proof switch in "STEREO/▮▮" position. (1...AMBIENCE/▮▮, 2...STEREO/▮▮, 3...FM MONO/▮)
3. S3-1~S3-4: Tape Selector Switch in "NORMAL" position. (1...NORMAL, 2•3...METAL (P.B)/CrO_2)
4. S4-1~S4-4: Selector switch in "TAPE" position. (1...TAPE, 2...RADIO, 3...LINE IN)
5. S5-4: Band switch in "FM" position. (1...AM, 3...FM)
6. S6-1, S6-2: Equalizer (LOW BOOST) switch in "OFF" position. (1•4...ON, 3•6...OFF)
7. S7-1, S7-2: Equalizer (MIDDLE BOOST) switch in "OFF" position. (1•4...ON, 3•6...OFF)
8. S8-1, S8-2: Equalizer (HIGH BOOST) switch in "OFF" position. (1•4...ON, 3•6...OFF)
9. S9-1, S9-2: Equalizer (HIGH CUT) switch in "OFF" position. (1•4...ON, 3•6...OFF)
10. S10: Power switch in "OFF" position.
11. S11: Direction switch.
12. S12: Motor switch.
13. S13: Forward switch.
14. S16 (J1): AC/DC switch.

VR1: VCO Oscillator frequency adjust VR.
VR101, 201: Volume control VR.
VR301: Balance control VR
VR302: Bias oscillator control VR. (NORMAL)
VR303: Bias oscillator control VR. (CrO_2)

15. DC voltage measurements ave taken with electronics voltmeter from negative terminal of battery.
< >...FM, ( )...AM, [ ]...Record,
No mark...Playback
16. Battery current: No signal ..... 89 mA
Maximum output (radio) ..... 810 mA
Maximum output (tape) .....1060 mA

17. Important safety notice
The shaded area on this schematic diagram incorporates special features important for protecion from fire and electrical shock hazards.
When servicing it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.

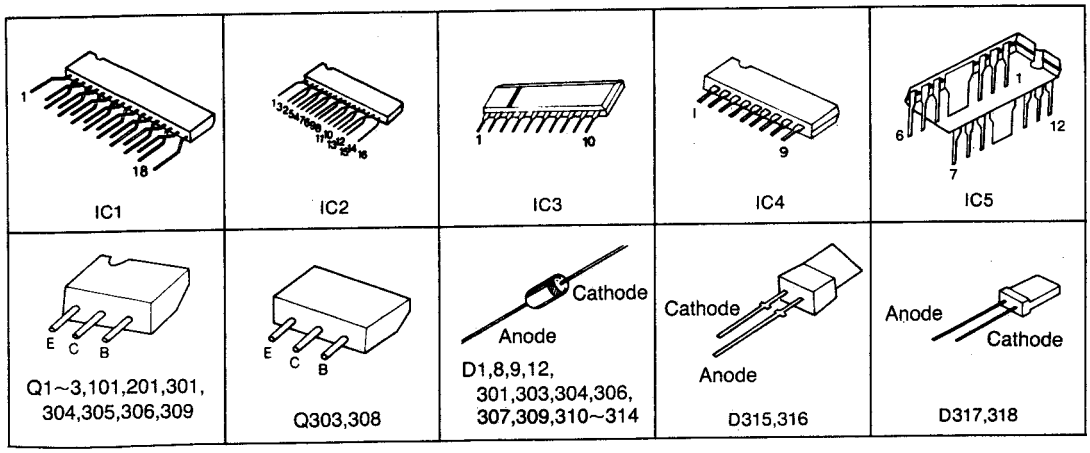
+(B) Voltage Line
Radio (FM) Signal Line
Tape (PLAYBACK) Signal Line
Tape (RECORD) Signal Line
Tape/Radio Signal Line



Ref No.	Zone	Part No.	Function Name
IC1	B•9	RVIBA4232L	FM/AM IF AMP, DET AM OSC, MIX
IC2	B•14	RVIBA1332L	FM MPX
IC3	E•7	RVIM51164AL	PRE AMP
IC4	E•10	RVIBA6433	AMBIENCE
IC5	D•15	RVILA4555	POWER AM
Q1	C•2	2SC2377C (2SC2377)	FM OSC AMP
Q2	A•3	2SC2377C (2SC2377)	FM RF AMP
Q3	A•4	2SC2377C (2SC2377)	MIXER
Q101	E•4	2SC2021MLNS	EQ AMP
Q201	F•4	2SC2021MLNS	EQ AMP
Q301	G•3	2SC2021MS	MUTING
Q303	H•5	2SD1469MR	BIAS OSC
Q304	F•13	2SC2021MS	MUTING
Q305	F•12	2SC2021MS	MUTING
Q306	F•14	2SC2021MS	DRIVE
Q308	G•13	2SD1469MR	REGULATOR
Q309	G•11	2SB641R	LED SWITCHING
D1	B•2	MA165TA (MA165)	PROTECTOR
D8	B•5	MA165TA (MA165)	AGC
D9	C•8	MA165TA (MA165)	AGC
D12	C•5	MA165TA (MA165)	SWITCHING

Ref No.	Zone		Part No.	Function Name
D301	G•2		MA165TA (MA165)	MUTING
D303	F•12		MA165TA (MA165)	SWITCHING
D304	G•13		MA165TA (MA165)	SWITCHING
D306	G•14		MA165TA (MA165)	DRIVER
D307	H•13		RVD68JSBZT (RVDRD6R8JB2)	REGULATOR
D309	D•15		MA165TA (MA165)	PROTECTOR
D310	F•15		MA165TA (MA165)	PROTECTOR
D311	G•16	[M]	1SR35-200A (1SR35200)	RECT
		[C]	SM-1A-02 (RVDSM1A02)	
D312	G•16	[M]	1SR35-200A (1SR35200)	RECT
		[C]	SM-1A-02 (RVDSM1A02)	
D313	H•16	[M]	1SR35-200A (1SR35200)	RECT
		[C]	SM-1A-02 (RVDSM1A02)	
D314	H•16	[M]	1SR35-200A (1SR35200)	RECT
		[C]	SM-1A-02 (RVDSM1A02)	
D315	H•10		LN326GP	FWD IND
D316	H•11		LN326GP	REV IND
D317	H•11		LN224RPH	POWER/BATT IND
D318	G•11		LN224RPH	FM STEREO IND

( )...Supply Parts Number



ELECTRICAL PARTS LIST

Numbering System of Resistor

Example

ERD	25	F	J	101	
Type	Wattage	Shape	Tolerance	Value (100Ω)	
ERX	2	AN	J	2R2	
Type	Wattage	Shape	Tolerance	Value (2.2Ω)	

Numbering System of Capacitor

Example

ECKD	1H	102	Z	F
Type	Voltage	Value (1000 pF)	Tolerance	Peculiarity
ECEA	50	M	R47	
Type	Voltage	Peculiarity	Value (0.47 µF)	

Resistor Type	Wattage	Tolerance
ERD: Carbon	10 : 1/8 W	J : ±5%
ERD: Metal Film	12 : 1/2 W	
ERX: Metal Film	25 : 1/4 W	
ERQ: Fust Type Metal	1 : 1 W	
ERD: Carbon (Chip Type)	18 : 1/8 W	

Capacictor Type	Voltage		Tolerance
	ECEA Type	Other	
ECEA: Electrolytic	OJ : 6.3 V	2H : 500 V DC	C : ±0.25 pF
ECCD: Ceramic	1A : 10 V	1 : 100 V	J : ±5%
ECKD: Ceramic	1C : 16 V	DKC : 400 V AC	K : ±10%
ECQM: Polypyester	1E : 25 V		Z : +80%, −20%
ECQP: Polypropylene	1H : 50 V		P : +100%, −0%
ECET: Electrolytic	1V : 35 V		
ECEA□□□N: Non Polar Electrolytic	50 : 50 V		
QCU □: Ceramic (Chip Type)	25 : 25 V		
ECUX: Ceramic (Chip Type)	16 : 16 V		

REPLACEMENT PARTS LIST

Important safety notice
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Notes:
[M]...For U.S.A. area.
[C]...For Canada area.

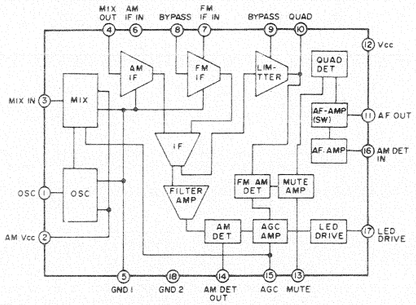
Ref. No.	Part. No.
RESISTORS	
R1,39,340,341	ERD16TJ473
R2,109,112,120, 122,209,212,220, 222,327,600	ERD16TJ103
R3,117,217	ERD16TJ123
R4	ERD25FJ222
R5,500	ERD16TJ560
R12,127	ERD16TJ822
R13,27,128,228, 345	ERD16TJ153
R14,110,135,210, 235	ERD16TJ101
R16,134,234,315	ERD16TJ152
R17	ERD25FJ181
R18	ERD25FJ121
R21,111,211	ERD16TJ331
R28	ERD16TJ393
R31,32,114,214, 305,306	ERD16TJ333
R33,34,125,225, 312,346	ERD16TJ332
R35	ERD25FJ152
R36	ERD16TJ681
R37	ERD25FJ392
R38,124,132, 224,232	ERD16TJ562
R101,201	ERD25TJ563
R102,202,349	ERD16TJ391
R103	ERD25FJ221
R104	ERD25FJ122
R105	ERD16TJ183
R106	ERD16TJ122
R108,208	ERD16TJ564
R131, 231	ERD16TJ121
R113,213	ERD25FJ471
R115,215,318, R116,216,328, 329,330,331,353	ERD16TJ102
R118,218	ERD16TJ104
R119,219,348	ERD16TJ151
R121,221	ERD16TJ334
R123,223	ERD16TJ223
R126,226	ERD16TJ221
R133,233,314	ERD16TJ2R2
R136,236	ERD16TJ330
R137,237	ERD16TJ471
R227	ERD25FJ822
R301	ERD25FJ010
R313	ERD25FJ6R8
R315	ERD16TJ182
R316	ERD16TJ275
R317	ERD25FJ470
R319	ERD25FJ562
R332	ERD16TJ154
R333	ERD16TJ105
R336	ERD16TJ272
R338,339,352	ERD16TJ561
R342	ERD16TJ472
R343,350	ERD16TJ682
R344,347	ERD25FJ391
CAPACITORS	
C1,2,21,101,105, 107,112,121,127, 207,212,221,227, 343,348,349,355	RCBS1H102KB
C3	RCBS1H220JY
C4	RCBS1H100JL
C5	RCBS1H330JY
C7	ECCD1H220JC
C11	ECCD1H180JC
C19	RCBS1H2R7KY
C20	RCBS1H1R5ML
C22,30	RCBS1C103NY
C25	RCBS1H5R6KY
C26,27,28	ECFT1E223MX
C29,329	RCBS1H331KB
C31,341	ECEA1EU4R7
C33	ECFT1E682KV
C34	ECBT1C223NY
C35	ECEA0J331
C36,45,106,109, 115,122,126,209, 215,222,223,226	ECEA1HU010
C38,39,328	ECEA1HUR47
C40,41	ECFT1E123MX
C42,103	ECFT1E473MX
C43	ECQP1102JZ
C44	ECEA1HU0R1
C46,50,53,352	ECBT1H102MD
C47,48,104,108, 204,208,304,353	RCBS1H101KB
C102	ECFT1E153MX
C110,210	ECEA1HUR22
C111,211	RCBS1C272MX
C113,213	RCBS1H820KB
C114,214,314	ECEA1AU220
C32,116,119,216 219	ECFT1E393MX
C117,120,217, 220	ECFT1E273MX
C118,218	ECKD1H222MD
C123	ECEA1HK010
C128,228,302, 356	ECEA0JU101
C130,230,335	ECEA1AU101
C131,231,354	ECQV1H104JZ
C132,232	ECEA1AU102
C133,233	ECEA1HK0R1
C206	ECEA1HSS010
C301	ECQV1H224JZ
C303,311,316	ECEA0JU221
C309	ECQV1H334JZ
C310	ECQV1H223JZ
C312,313	ECFT1E472KV
C315	ECEA1CU100
C325	ECEA1AK330
C326,327	ECFT1E103MX
C336	ECBT1E103NX
C337	ECEA1CU332
C338	ECEA1CU221
C339	ECEA0JSS470
C340	ECEA1CU101
C342	RCBS1H471KB
C344,345,346, 347,350,351	ECKD1H103ZF
C357	ECEA0JU471

Ref. No.	Part. No.	Part Name & Description
INTEGRATED CIRCUITS		
IC1	RViBA4232L	IC
IC2	RViBA1332L	IC
IC3	RViM51164AL	IC
IC4	RViBA6433	IC
IC5	RViLA4555	IC
TRANSISTORS		
Q1,2,3	2SC2377	Transistor
Q101,201	2SC2021MLNS	Transistor
Q301,304,305,306	2SC2021MS	Transistor
Q303,308	2SD1469MK	Transistor
Q309	2SB641R	Transistor
DIODES & RECTIFIERS		
D1,8,9,12,301,303,304,306, 309,310	MA165	Diode
D307	RVDRD6R8JB2	Diode
D311,312,313,314 [M] (For U.S.A)	1SR35200	Diode
D311,312,313,314 [C] (For Canada)	RVDSM1A02	
D315,316	LN326GP	LED
D317,318	LN224RPH	LED
COILS		
L2	RLD4Y44	Antenna Coil, FM
L5	RLD4Y43	Oscillator Coil, FM
L8	RLF2W52	Antenna Coil, AM
L9	RL02M3	Oscillator Coil AM
L301	RL08C1	Oscillator Coil, Bias
TRANSFORMERS		
T1,3	RLi4M101	IFT, FM 1st, 2nd
T2	RLi2M227	IFT, AM
T301 [M] (For U.S.A.)	RLT5Z3M2A	Power Transformer ⚠
T301 [C] (for Canada)	RLT5Z3C5A	Power Transformer ⚠
VARIABLE CAPACITORS		
VC1~4 (CT1~4)	RCV4LC2R2A	Variable Capacitor W/Trimmer Capacitor
VARIABLE RESISTORS		
VR1,303	EVN61AA00B14	Variable Resistor, 10 kΩ, (B)
VR101,201	EWCRPAF15A54	Variable Resistor, 50 kΩ, (A)
VR301	EWHRXAF15G54	Variable Resistor, 50 kΩ, (B)
VR302	EVN61AA00B24	Variable Resistor, 20 kΩ, (B)
CERAMIC FILTERS		
CF1	QCRZ107MA5	Ceramic Filter
CF2	RVFSFU455B	Ceramic Filter
THERMISTORS		
TH1	ERTD2FHL332S	Thermistor
FILTERS		
Z2	RXABPWB5	Component Combinations
SWITCHES		
S1	RSH2J01W	Switch, Record/Playback
S2,3,4	RSS3D16Z	Switch, Mode/Beat Proof, Tape, Selector
S5	RSS3B26Z	Switch, Band
S6,7,8,9	ESB6443	Switch, Equaliser
S10	RSH2B34Z	Switch, Power
S11	QSB0253	Switch, Reverse
S12,15	QSB0323	Switch, Motor, Forward
JACKS		
J1	RJJ112Z	Jack, AC ⚠
J101	RJF1094Z	Jack, Line in
J201	RJF1094Y	Jack, Line in
J302	RJJ1D27Z	Jack, Headphones

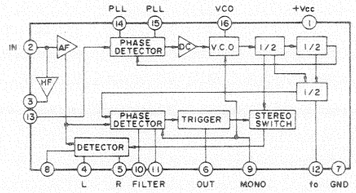
CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM MODEL RX-F9

■ IC BLOCK DIAGRAM

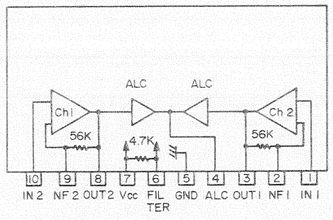
IC1 RVIBA4232L



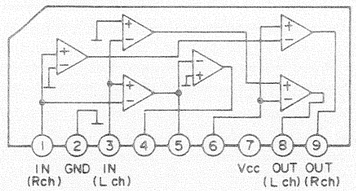
IC2 RVIBA1332L



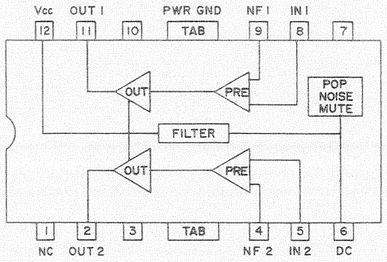
IC3 RVIM51164AL

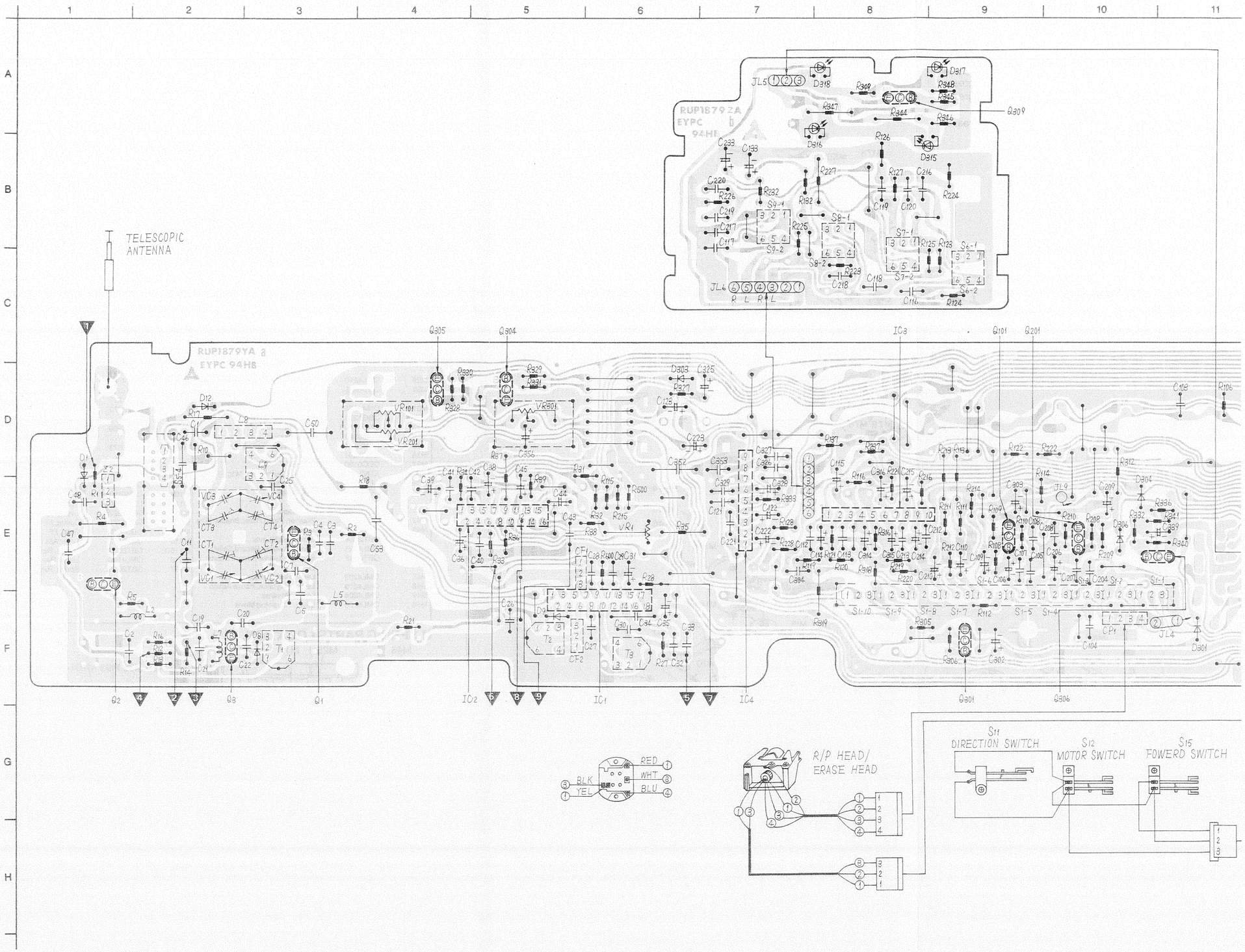


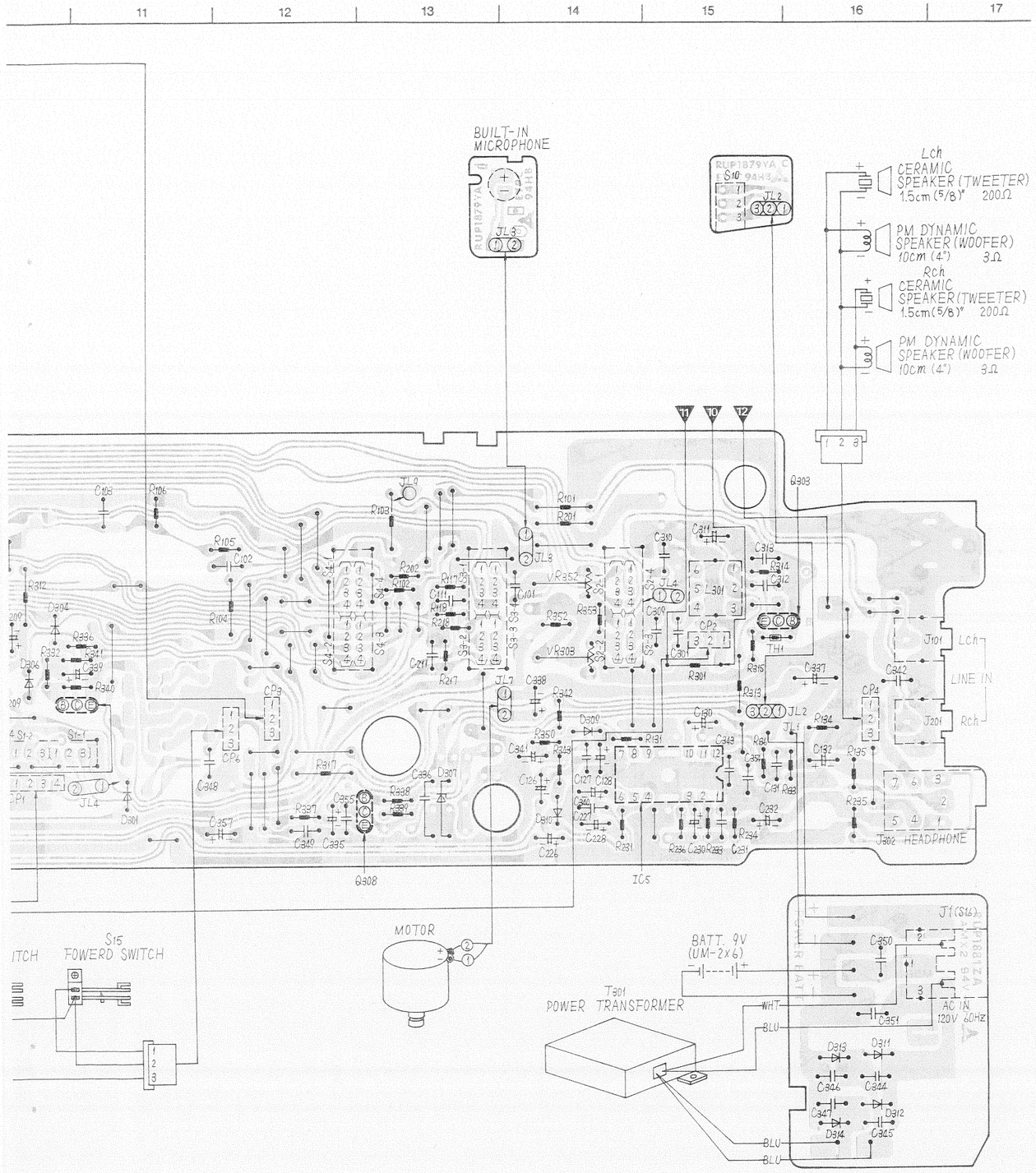
IC4 RVIBA6433



IC5 RVILA4555







MEASUREMENTS AND ADJUSTMENTS

■ ALIGNMENT INSTRUCTION

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT	
1. Set volume control to maximum. 2. Set Equalizer switch to OFF. 3. Set band switch to AM or FM. 4. Set balance control to center.	5. Set function selector to radio. 6. Set power source voltage to 9 V DC. 7. Output of signal generator should be no higher than necessary to obtain an output reading.

■ AM ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		CONNECTIONS	FREQUENCY				
		AM-IF ALIGNMENT					
(1)	AM	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz 30% Mod. at 400 Hz	Point of non-interference. (on/ about 600 kHz)	Output meter across voice coil.	T2 (AM IFT)	Adjust for maximum output.
		AM-RF ALIGNMENT					
(2)	AM	〃	550 kHz	550 kHz (Refer to Fig. 4)	Output meter across voice coil	L9 (AM OSC Coil) (*1) L8 (AM ANT Coil)	Adjust for maximum output. Adjust L8 by moving coil bobbin along ferrite core.
(3)	AM	〃	1,500 kHz	1,500 kHz (Refer to Fig. 4)	〃	CT4 (MW OSC Trimmer) CT3 (AM ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
	(*1) Cement antenna bobbin with wax after completing alignment.						

■ FM ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		CONNECTIONS	FREQUENCY				
		FM-IF ALIGNMENT					
(1)	FM	Connect to test point ▼ through 0.001 μF. Negative side to test point ▼.	10.7 MHz (SWP.)	Point of non-interference. (on/ about 90 MHz)	Connect vert. amp. of scope to test point ▼. Negative side to test point ▼.	T1 (FM 1st IFT)	Adjust for maximum amplitude. (Refer to fig. 2.)
(2)	FM	〃	〃	〃	〃	T3 (FM 2nd IFT)	Adjust for maximum amplitude. (Refer to fig. 3.)
		FM-RF ALIGNMENT					
(3)	FM	Connect to test point ▼ through FM dummy antenna. Negative side to test point ▼.	90 MHz	90 MHz (Refer to Fig. 4)	Output meter across voice coil.	L5 (FM OSC Coil) L2 (FM ANT Coil)	(*2) Adjust for maximum output.
(4)	FM		106 MHz	106 MHz (Refer to Fig. 4)	〃	CT2 (FM OSC Trimmer) CT1 (FM ANT Trimmer)	(*2) Adjust for maximum output. Repeat steps (3) and (4).
	(*2) Three output responses will be present; proper tuning is the center frequency.						

■ SEPARATION ALIGNMENT

ITEM	FM SIGNAL GENERATOR SOURCE CONNECTION	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT	SPECIFICATION	REMARKS
Adjustment of pilot signal.	92 MHz, 60 dB (CW) Connect to test point ▼ trough FM dummy antenna. Negative side to test point ▼.	▼...(+) ▼...(−)	VR1	19 kHz	Adjust VR1, for 19 kHz (±100 Hz) reading on electronics counter.

■ TAPE ADJUSTMENT

ITEM	INPUT	MEASUREMENT POINT	SPECIFICATION	ADJUSTMENT POINT	REMARKS
Azimuth	QZZCFM (8 kHz, −20 dB)	SP OUT (AC voltmeter & Oscilloscope)	Maximum output.	Azimuth screw (FWD, REV)	Playback mode Mode switch→STEREO (Refer to Fig. 6)
Bias oscillation frequency	Use normal tape	⑩...(+) ⑪...(−) (Frequency counter)	67±5 kHz	L301	Record mode Mode switch→MONO/I (Refer to Fig. 5)
Erase current	———	⑩...(+) ⑪...(−)	CrO_2...95±9 mA Normal...70±7 mA	VR303...CrO_2 VR302...Normal	Record mode Mode/Beat proof switch→STEREO/II Tape selector→CrO_2 or NORMAL (Refer to Fig. 5)
Tape speed	QZZCWAT (3 kHz)	SP OUT (Frequency counter)	3000±90 Hz	Motor Volume	Playback mode (Refer to Fig. 6)

■ ALIGNMENT POINTS

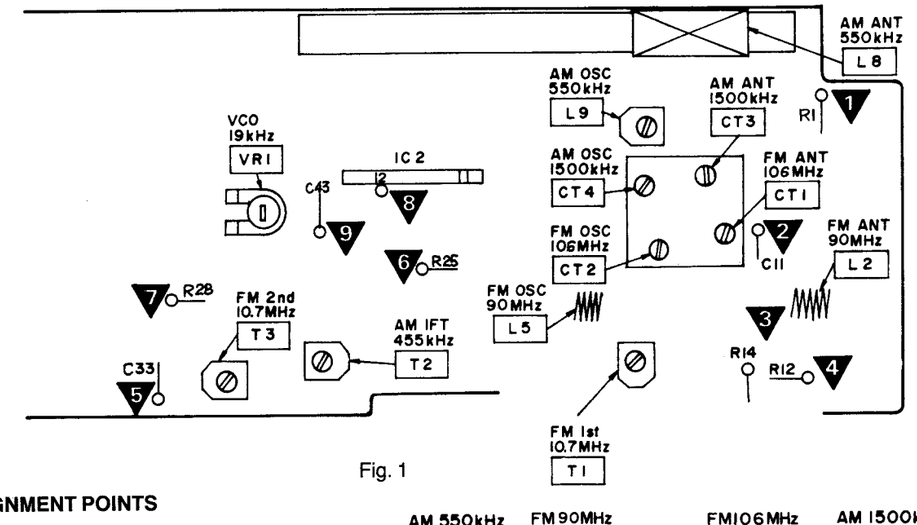


Fig. 1

■ ALIGNMENT POINTS

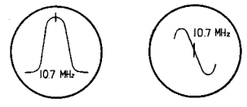


Fig. 2

Fig. 3

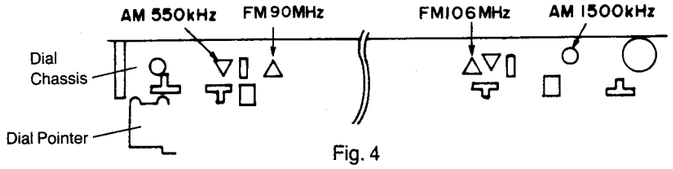


Fig. 4

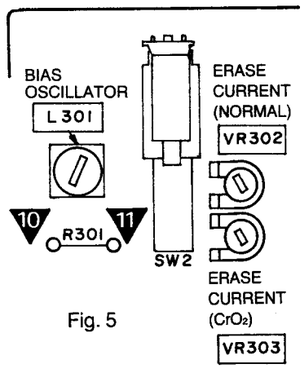


Fig. 5

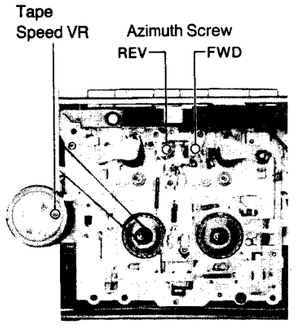
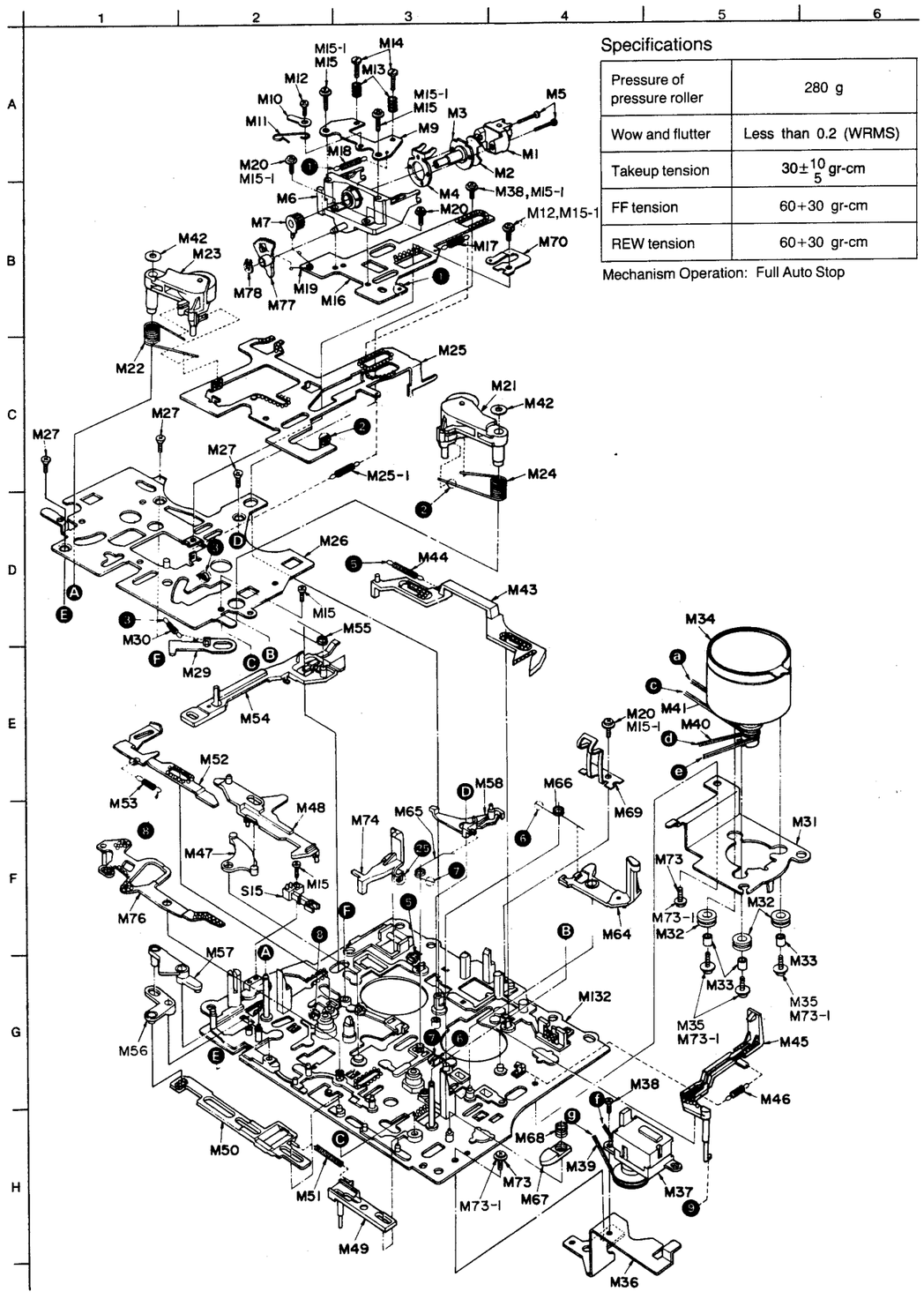


Fig. 6

MECHANISM PARTS LOCATION

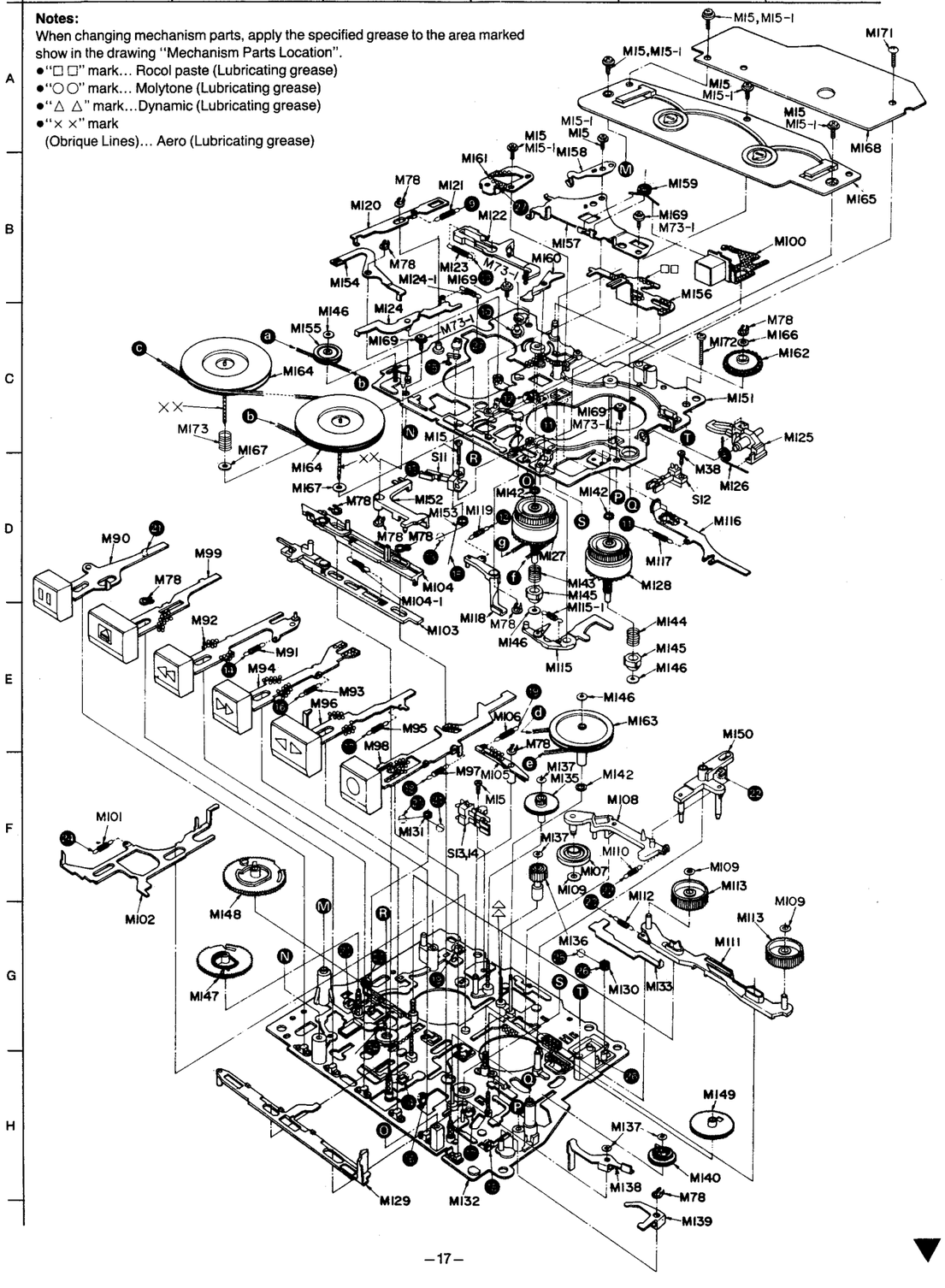


Specifications

Pressure of pressure roller	280 g
Wow and flutter	Less than 0.2 (WRMS)
Takeup tension	$30\pm\frac{10}{5}$ gr-cm
FF tension	60+30 gr-cm
REW tension	60+30 gr-cm

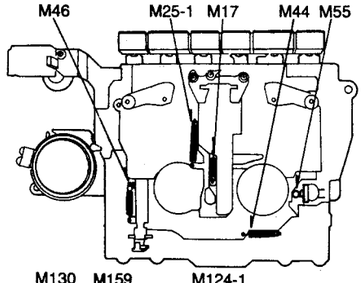
Mechanism Operation: Full Auto Stop

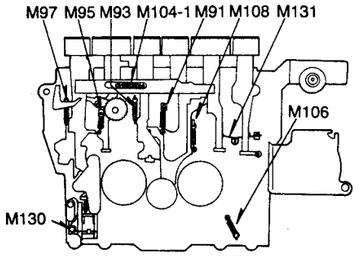
Notes:
When changing mechanism parts, apply the specified grease to the area marked show in the drawing "Mechanism Parts Location".
- "□ □" mark... Rocol paste (Lubricating grease)
- "○ ○" mark... Molytone (Lubricating grease)
- "△ △" mark...Dynamic (Lubricating grease)
- "× ×" mark
  (Obrique Lines)... Aero (Lubricating grease)

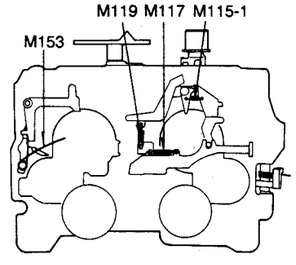


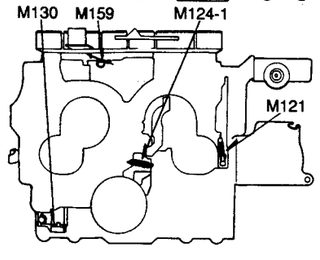
Ref. No.	Part. No.	Part Name & Description
		MECHANICAL PARTS
M1	QWY4172Y	R/P, Erase Head
M2	QMF2362	Bracket
M3	QDP2023	Head Bobbin
M4	QMA4860	Fixer, Head
M5	XQN16+C8	Screw, R/P, Erase Head M'tg ⊕1.6×8
M6	QXZ0083	Head Case Ass'y
M7	QDG1377	Gear (B), Head
M9	QMF2358	Azimuth Plate
M10	QJT0039	Terminal
M11	QBN2115	Spring, Head Cord Protector
M12	XTN2+3B	Screw, Azimuth Adjust Plate M'tg ⊕2×3
M13	QBC8022	Spring, Azimuth Adjust
M14	QHQ1376	Screw, Azimuth Adjust
M15	XTN2+8B	Screw, Azimuth adjust plate, etc. M'tg ⊕2×8
M15-1	XWG2	Washer, Azimuth adjust plate, etc. M'tg ∅2
M16	QMK2181	Head Base
M17	QBT2067	Spring, Head Base
M18	QBT2087	Spring, Head Shield
M19	QBN2114	Spring, Revolving (Head)
M20	XTN2+6B	Screw, Head Case Ass'y M'tg ⊕2×6
M21	QXL1800	Pinch Roller Bracket Ass'y (Right)
M22	QBN2105	Spring, Pinch Roller Bracket Ass'y (Left)
M23	QXL1801	Pinch Roller Bracket Ass'y (Left)
M24	QBN2104	Spring, Pinch Roller Bracket Ass'y (Right)
M25	QMK2182	Head Base Operation Plate
M25-1	QBT2078	Spring, Head Base Operation Plate
M26	QXK3031	Main Guide Plate
M27	XTS2+6B	Screw, Main Guide Plate M'tg ⊕2×6
M29	QML4210	Lever, Stop/Eject Change
M30	QBT1989	Spring, Stop/Eject Change Lever
M31	QMA4862	Fixer, Motor Ass'y
M32	QBG1373	Rubber, Motor Ass'y
M33	QMSK0071	Pipe, Motor Ass'y
M34	QXU0388	Motor Ass'y
M35	XSN26+6	Screw, Motor Ass'y M'tg
M36	QMA4861	Fixer, Counter
M37	QDC0180	Counter
M38	XTN2+5B	Screw, Counter, etc, M'tg ⊕2×5
M39	QDB0383	Belt, Counter
M40	QDB0384	Belt, Relay
M41	QDB0385	Belt, Capstan
M42	QBW2046K	Washer, Pinch Roller Bracket M'tg
M43	QML4224	Lever, Kick
M44	QBT2084	Spring, Kick Lever
M45	QML4221	Lever, Reverse Record Safety
M46	QBT2082	Spring, Reverse Record Safety Lever
M47	QML4203	Lever, Record Discriminate
M48	QML4219	Lever, Playback, Pause Action
M49	QML4204	Lever, Reverse
M50	QML4220	Lever, Revolving Move
M51	QBC1515	Spring, Reverse
M52	QML4189	Lever, Record
M53	QBT2066	Spring, Record Lever
M54	QML4223	Lever, Idler Change
M55	QBN2112	Spring, Idler Change Lever
M56	QML4208	Lever, Reverse
M57	QML4200	Lever, Reverse Change
M58	QML4225	Bracket, Brake
M64	QML4198	Lever, Eject
M65	QBN2103	Spring, Brake Bracket
M66	QBN2107	Spring, Eject Lever
M67	QML4231	Lever, Pause Lock
M68	QBC1436	Spring, Pause Lock Lever
M69	QBP2036	Spring, Cassette Tape Pressure
M70	QBP2037	Spring, Head Plate
M73	XTN26+6B	Screw, Counter Fixer, etc. M'tg ⊕2.6×8
M73-1	XWG26	Washer, Counter Fixer, etc, M'tg ∅2.6
M74	QML4211	Lever, Record Safety
M76	QXL1782	Lever, Reverse Start
M77	QXG1376	Gear (A), Head
M78	XUEV25V	Circlip, Record Reverse Lever, etc. M'tg ∅2.5
M90	QXR1067	Button, Pause Rod
M91	QBT2068	Spring, FF Button Rod Ass'y
M92	QXR1069	Rod Ass'y, FF Button
M93	QBT2068	Spring, Rew Button Rod Ass'y
M94	QXR1071	Rod Ass'y, REW Button
M95	QBT2069	Spring, Playback Button Rod Ass'y
M96	QXR1073	Rod Ass'y, Playback Button
M97	QBT2085	Spring, Record Button Rod Ass'y
M98	QXR1075	Rod Ass'y, Record Button
M99	QXR1076	Rod Ass'y, Stop/Eject Button
M100	QXR1077	Direction Rod Ass'y
M101	QBT2068	Spring, Lever
M102	QML4216	Lever
M103	QXR1078	Lock Rod Ass'y
M104	QXL1781	Lever Ass'y, Reverse Record
M104-1	QBT2070	Spring, Reverse Record Lever Ass'y
M105	QML4209	Lever, Full Auto Stop error Prevention
M106	QBT2073	Spring, Full Auto Stop error prevention Lever
M107	QXP0663	Idler Pulley Ass'y
M108	QML4199	Lever, Idler Pulley
M109	QBW2046K	Washer
M110	QBN2119	Spring, Idler Pulley Lever
M111	QML4222	Lever, FF
M112	QBT2071	Spring, FF Lever
M113	QDG1380	Gear, FF
M115	QXL0793	Lever Ass'y, Reverse Start
M115-1	QBT2079	Spring, Reverse Start Lever Ass'y
M116	QML4190	Lever, Reverse Start
M117	QBT2075	Spring, Reverse Start Lever
M118	QML4212	Lever, Playback Start
M119	QBT2072	Spring, Playback Start Lever
M120	QML4184	Lever, Record Release
M121	QBT2074	Spring, Record Release Lever
M122	QML4213	Lever, Auto Stop Detector Drive
M123	QBT2077	Spring, Auto Stop Detector Drive Lever
M124	QXL1798	Lever Ass'y, Auto Stop Move
M124-1	QBT2076	Spring, Auto Stop Move Lever
M125	QML4196	Lever, R/P Switch Operation
M126	QBN2102	Spring, R/P Switch Operation Lever
M127	QXD0167	Takeup Reel Table Ass'y
M128	QXD0169	Supply Reel Table Ass'y
M129	QML4207	Lever, Leaf Switch Operation
M130	QBN2106	Spring, Record Safety Lever
M131	QBN2110	Spring, Stop Rod
M132	QXK3025	Mechanism Chassis Ass'y
M133	QML4194	Lever, Record Release Safety
M135	QDG1381	Gear, Slow down
M136	QDG1379	Gear, Idler
M137	QBW2030	Washer, Slow down Gear M'tg∅1.5
M138	QML4187	Lever, Head Base Release
M139	QML4186	Lever, Switch ON
M140	QDG1384	Gear, Reverse Start
M142	QBJ3220	Washer, Supply Reel Table, etc. M'tg
M143	QBC8025	Spring, Take up Reel Table (For Forward)
M144	QBC8024	Spring, Supply Reel Table (For Reverse)
M145	QDP2024	Reel Cap
M146	QBW2008	Washer, Reel Cap, etc. M'tg
M147	QDG1386	Gear, Pause, Cue
M148	QDG1385	Main Gear
M149	QDG1383	Gear, Reverse
M150	QML4202	Lever, Idler Control
M151	QXK3029	Sub Chassis Ass'y
M152	QML4201	Lever, Pause
M153	QBN2108	Spring, Pause Lever
M154	QML4185	Lever, Record Release
M155	QDP2027	Pulley, Relay
M156	QML4188	Lever, Reverse Mode Change
M157	QMF2357	Bracket, Reverse Mode Change Lever
M158	QBP2038	Spring, Reverse Mode Change Lever
M159	QBN2109	Spring, Manual Reverse Rod
M160	QML4197	Lever, Reverse Moving
M161	QMF2359	Holding Plate
M162	QDG1378	Gear, Auto Stop
M163	QDP2025	Pulley, Relay
M164	QXF0250	Flywheel Ass'y
M165	QMF2361	Flywheel Bracket (B)
M166	QBW2016	Washer, Auto Stop Gear
M167	QBW2136	Washer, Flywheel Ass'y
M168	QTS1656	Shield Plate
M169	XTN26+8B	Screw, Reverse Lever Plate, etc. M'tg ⊕2.6×8
M171	XTN26+13B	Screw, Shield Plate M'tg⊕2.6×1.3
M172	XTN26+16B	Screw, Sub Plate M'tg ⊕2.6×1.6
M173	QBC1517	Spring, Capstan

■ SPRING PARTS LOCATION

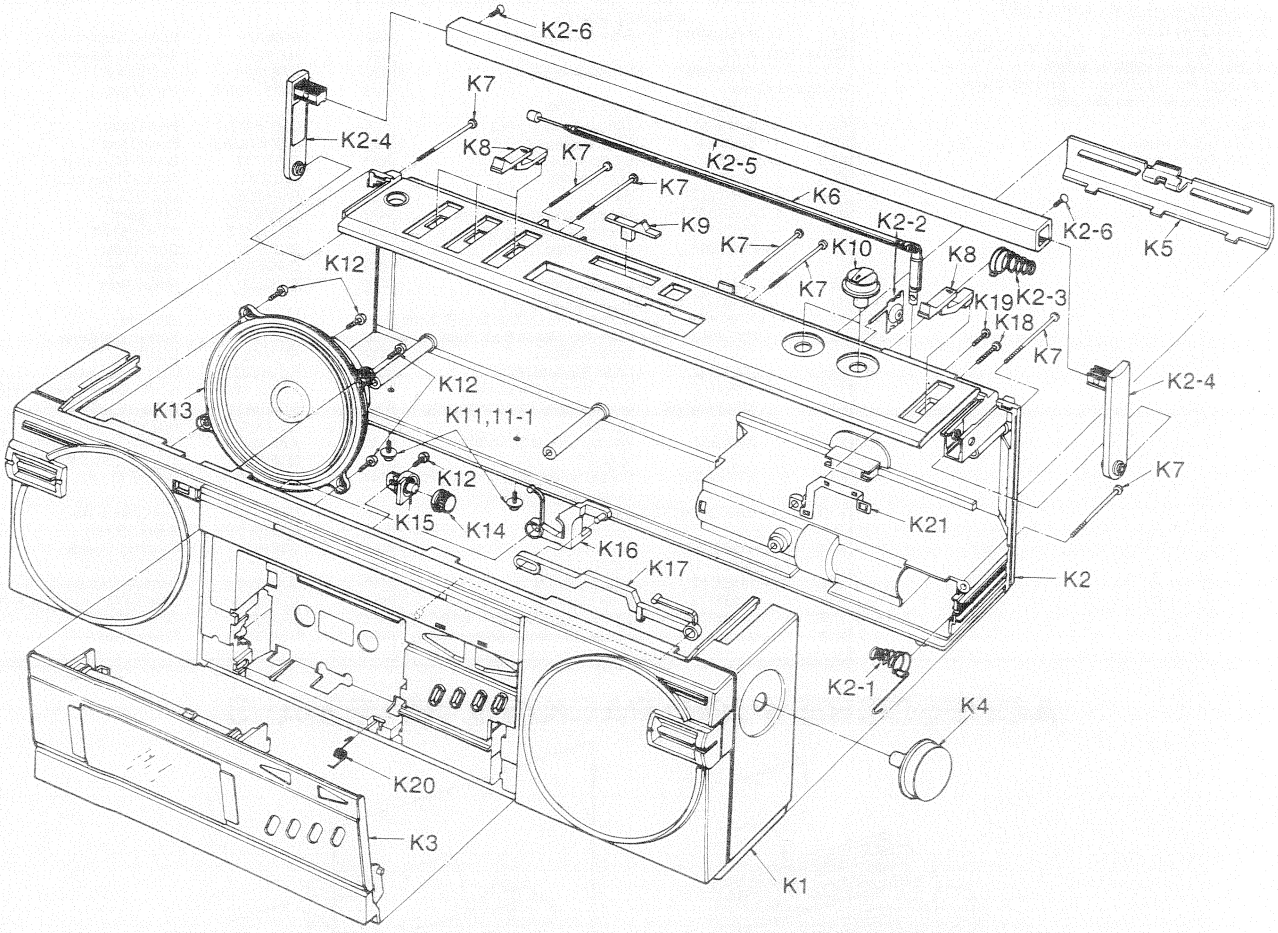


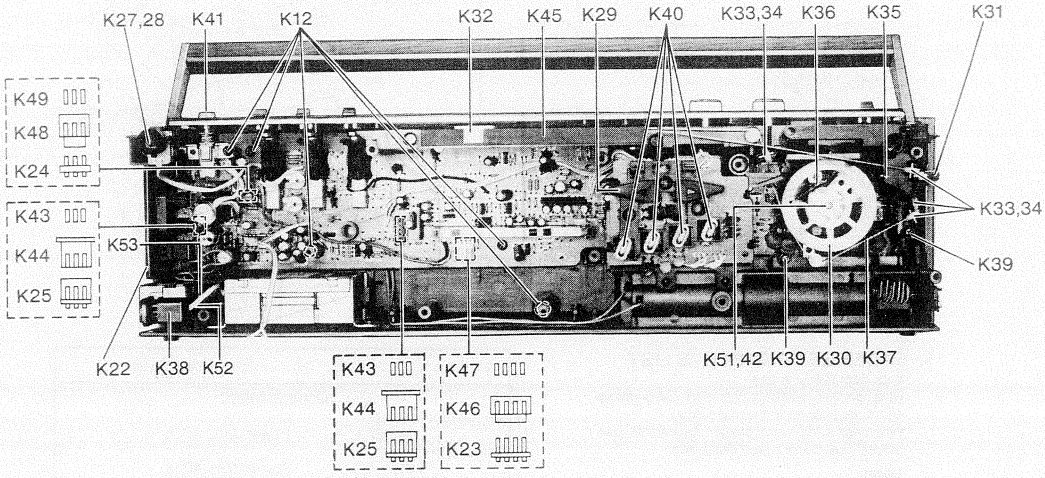






CABINET PARTS LOCATION





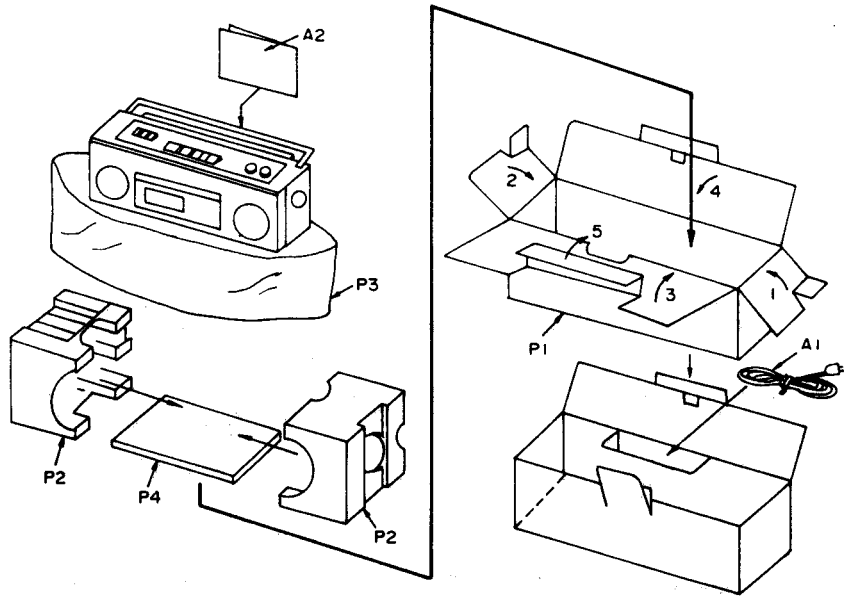
EPLACEMENT PARTS LIST

mportant safety notice
omponents identified by ⚠ mark have special
haracteristics important for safety.
hen replacing any of these components, use
nly manufacturer's specified parts.

otes:
M]...For U.S.A. area.
C]... For Canada area.

Ref. No.	Part. No.	Part Name & Description
		CABINET PARTS
K1	RYMXF9M8	Front Cabinet Ass'y
K2 [M] (For U.S.A.)	RYFXF9M7	Rear Cabinet Ass'y
K2 [C] (For Canada)	RYFXF9MC7	Rear Cabinet
K2-1	RJC618Z	Spring, Battery (+/−)
K2-2	RJC205B	Terminal, Battery (+)
K2-3	QBN8007	Spring, Battery (−)
K2-4	RKX321Z	Arm, Handle
K2-5	RKH122Z7	Handle
K2-6	XTS3+8GFY	Screw, Handle M'tg ⊕ 3×8
K3	RYQXF9M	Cassette Compartment Ass'y
K4	RBN709Z	Knob, Tuning
K5	RKK285Z7	Cover, Battery
K6	XEAQCR225DAN	Telescopic Antenna
K7	XTN3+55GFY	Screw, Front Cabinet M'tg ⊕ 3×55
K8	RYTXF9J	Knob Ass'y Mode/Beat Proof, Tape, Selector, Band,
K9	RBD293Z	Knob, Reverse Mode
K10	RBN710Z	Knob, Balance, Volume
K11	XSN3+8BVS	Screw, Power Transformer M'tg ⊕ 3×8
K11-1	XWG3FZ	Washer, Power Transformer M'tg Ø 3
K12	XTV3+8G	Screw, Speak, Mechanism, Circuit Board, Gear M'tg ⊕ 3×8
K13	EAS10P241SC	Speaker
K14	RDG5700Z	Gear, Eject
K15	RME361Z	Holder, Eject Gear
K16	RUB316Z	Eject Lever (A)
K17	RUB317Z	Eject Lever (B)
K18	XTN3+15GFY	Screw, Front Cabinet M'tg ⊕ 3×15
K19	XSN3+12S	Screw, Telescopic Antenna M'tg ⊕ 3×12
K20	RUW3Z	Spring, Cassette Lid
K21	RJT894Z	Terminal, Antenna
K22	RKE485Y	Jack Board
K23	QJP1986TNL	Plug (4 pin)
K24	QJP1921TN	Plug (3 pin)
K25	QJP03S005T	Plug (3 pin)
K27	RJM151Z	Built-in Microphone
K28	RHG720Z	Rubber, Microphone
K29	RMP233Z	LED Holder
K30	RDD5001Z	Dial Drum
K31	RDT9147Z	Tuning Shaft
K32	RDP276Z	Dial Pointer
K33	QDQ51678	Dial Roller
K34	RDY60Z	Roller Shaft
K35	XUC3FT	Stop Ring
K36	QBT1320	Spring, Dial Drum
K37	RDZ05Z	Dial Rope
K38	RUV482Z	Jack Cover, AC ⚠
K39	XTN3+40G	Screw, Dial Chassis M'tg ⊕ 3×40
K40	RBC662Z	Button, Equaliser
K41	RBC661Z	Button, Power
K42	XWG26	Washer, Dial Drum M'tg Ø2.6
K43	QJT1089	Terminal, Socket
K44	QJS03001T	Socket (3 pin)
K45	RZAXF9J	Dial Chassis Ass'y
K46	QJS1986T	Socket (4 pin)
K47	QJT1011	Terminal, Socket
K48	QJS1921TN	Socket (3 pin)
K49	QJT1054	Terminal, Socket
K51	XSN26+6	Screw, Dial Drum M'tg ⊕ 26×6
K52	RUV598Z	Cover, Diode
K53	RUV599Z	Cover, Diode

ACCESSORIES AND PACKING METERIALS



REPLACEMENT PARTS LIST

Important safety notice
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Notes:
[M]...For U.S.A. area.
[C]... For Canada area.

Ref. No.	Part. No.	Part Name & Description
		ACCESSORIES
A1 [M] (For U.S.A.)	RJA22X	Power Cord, AC ⚠
A1 [C] (For Canada)	RJA22Y	Power Cord, AC ⚠
A2 [M] (For U.S.A.)	RQX4540Z	Instruction Book
A2 [C] (For Canada)	RQX4536Z	Instruction Book
		PACKINGS
P1 [M] (For U.S.A.)	RPK1923Z	Gift Box
P1 [C] (For Canada)	RPK1961Z	Gift Box
P2	RPN9483Z	Pad
P3	QPCK0034	Polyethylene Cover
P4	QPAK1149	Cushion, Bottom

KTB
K.H M C Printed in Japan Ⓕ

ORDER NO. GAD8705081S4
A1

Service Manual

Supplement

Radio Cassette
RX-F9
(Silver)

FM-AM-FM Stereo Radio Cassette Recorder

- Please use this manual along with the original service manuals for the below models.
- This Service Manual indicates the main differences than Original RX-F9.

Model No.	Order No.
RX-9F [M] [C]	GAD84122219C1
RX-F9 [ME] [MF]	GAD85052258A5
RX-F9 [MZ]	GAD8506004A4

This is the Service Manual for the following areas.

- [M] ..... For U.S.A.
- [C] ..... For Canada.
- [ME] .... For AAFES EUROPE
- [MF] .... For AAFES PACIFIC
- [MZ] .... For Audio Club.

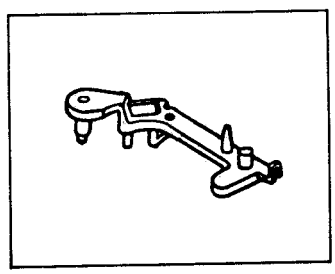
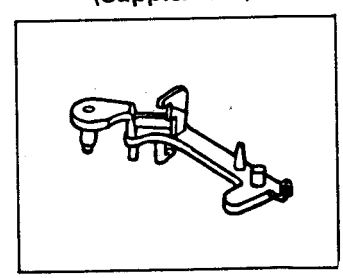
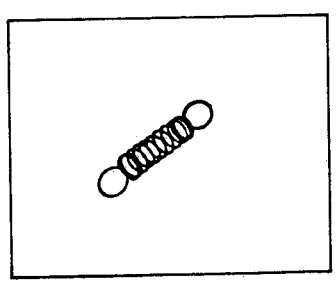
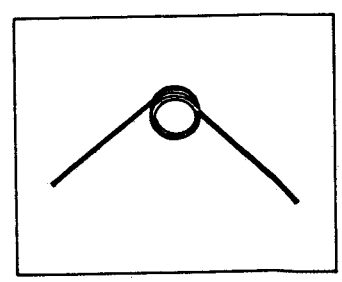
- There was a mistake in the part numbers and shapes of mechanism parts.

CORRECTION

■ PARTS COMPARISON TABLE

Ref. No.	Description	Part Number		Remarks
		RX-F9 (Original)	**RX-F9 (Supplement)**	
M20	Screw, Main Guide Plate M'tg ⊕ 2 x 6	XTN2+6B	**XTW2+6L**	Changed

■ CORRECTION PARTS (There is no change in the part number.)

	(Original)		(Supplement)
M108 QML4199		→	
M110 QBN2119		→	

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50 Meadowland Parkway,
Secaucus, New Jersey 07094

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Panasonic Hawaii, Inc.
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Matsushita Electric Trading Co., Ltd.
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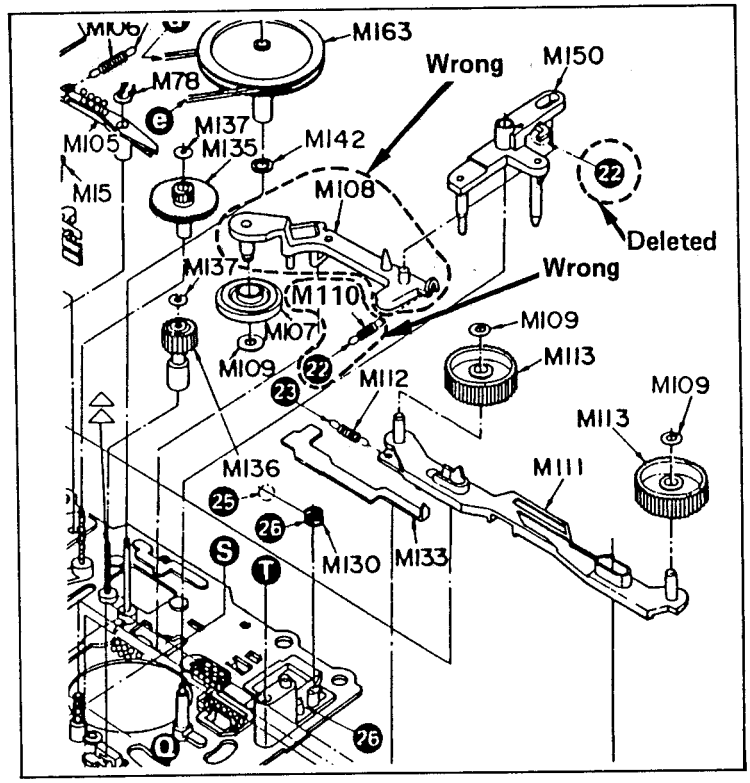
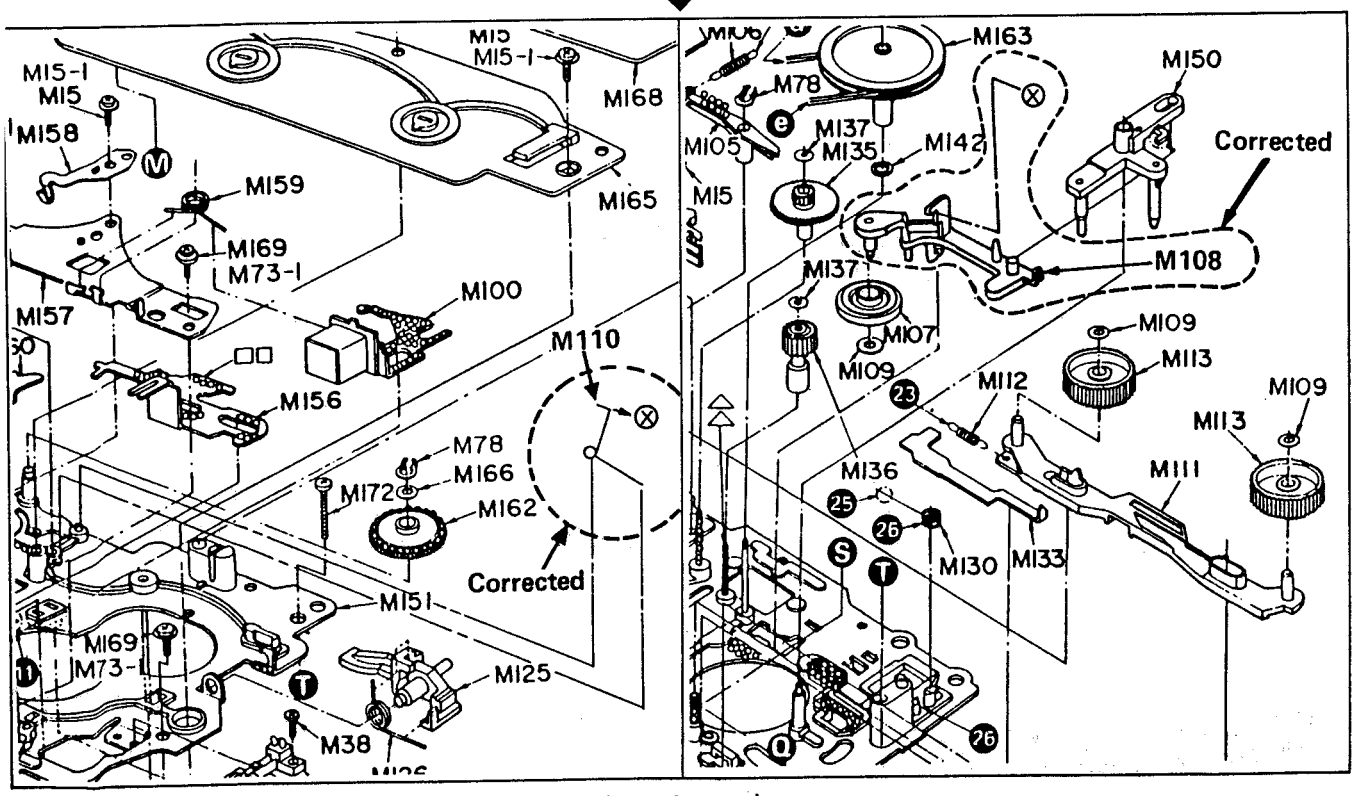
Minato-ku, Tokyo 105, Japan

MECHANISM PARTS LOCATION



(Original)



(Supplement)

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